

ABSTRACT OF THE DISCLOSURE

An internal combustion cylinder assembly includes a cylinder having a combustion chamber and a piston. An intake valve provides a working fluid to the combustion chamber while the piston moves from a top dead center position to a bottom dead center position. A pre-combustion chamber is connected communicably to the combustion chamber via a Suder valve and conveys a portion of the working fluid to the pre-combustion chamber while the Suder valve is substantially open. The Suder valve may open substantially simultaneously with the intake valve, remain substantially open while the piston moves from the top dead center position to the bottom dead center position during an intake stroke, and close substantially while the piston is returning to the top dead center position during a compression stroke.